cartridge 46*a*–46*f* in the magazine 41 to any of the optical disk drives 11*a*–11*f*. A control unit 16*a* inserts optical disk cartridges, housed in predetermined housing units within the magazine, in specific optical disk drives, controls each optical disk drive, allocates data to be recorded to each optical disk, and moreover, combines the data played back from each disk. A power supply 17 is arranged in order to operate this system, which also has terminals (not shown in the drawing) and the like for connection to a host computer.

When the magazine 41 is inserted into the cabinet 10*a*, the conveyor unit 12 operates by data from a switch which senses that it has been inserted, or data from the host computer. The conveyor unit 12 extracts one optical disk cartridge which is housed in the magazine 41, conveys the cartridge to a predetermined position, and inserts this optical disk cartridge into an optical disk drive. In this embodiment, the conveyor unit 12, by repeating the conveying operation, mounts in six optical disk drives the six optical disk cartridges, which were housed in the magazine 41. The optical disk drives in which the optical disk cartridges 46*a*–46*f* are respectively mounted are determined beforehand. Namely, the optical disk cartridge 46*a* is conveyed to and mounted in the optical disk drive 11*b*, the optical disk cartridge 46*b* to the optical disk drive 11*b*, and so on, and the optical cartridge 46*f* to the optical disk drive 11*f*.

In the above manner, because control of the conveyor unit 12 is always effected in the same manner by control unit 16*a*, there is no disorder due to erroneous insertion of the disk cartridges,

Furthermore, in cases in which the number of optical disk cartridges is smaller than the number of optical disk drives (for example, in FIG. 5, in the case that the optical disk cartridges 46*e*, 46*f* are absent), it may be that no optical disk cartridges are inserted in the corresponding optical disk drives (optical disk drives 11*e*, 11*f*) The control unit 16*a* then recognizes the drives (11*e*, 11*f*) in which no optical disk cartridges are inserted. The control unit 16*a* may control the disk drives so as to drive only the drives other than the optical disk drives 11*e*, 11*f*.

The operation of this optical disk system is next described.

Recording Operation

The control unit 16*a* allocates data from the host computer (not shown in the drawing) for use in the optical disk cartridges 46*a*–46*f*. The control unit 16*a* sends this allocated data respectively to the optical disk drives 11*b*–11*f*. The optical disk drives 11*b*–11*f* receive control from the control unit 16*a*, and record the data from the control unit 16*a* on the optical disks of the optical disk cartridges 46*a*–46*f*.

At this rime, three among the six optical disk drives record data on optical disks in the direction starting from the outer circumference, which has many sectors per track, in succession to the inner circumference. On the other hand, the remaining three optical disk drives record data on optical disks in the direction starting from the inner circumference, which have few sectors per track, in succession to the outer circumference In the case of this embodiment, the optical disk drives 11*b*–11*c* record data in the direction from the outer circumference, in succession to the inner circumference, and die optical disk drives 11*d*–11*f* If record data in the direction from the inner circumference, in succession to the outer circumference.

In this embodiment, the total amount of data per unit time to each optical disk by the optical disk drives 11*b*–11*f* becomes three times that of the first embodiment. The total recording amount per unit time to each optical disk by the optical disk drives 11*a*–11*f* (namely, the data transfer speed of the optical disk recording and playback device) becomes normally about constant (13.35 MB/second) (see FIG. 3). In this embodiment, because the number of optical disk drives is three times that of the first of embodiment, the transfer speed also becomes tee times as fast.

In this manner, in this embodiment, by recording data simultaneously on the optical disks in the optical disk cartridges 46*a*–46*f*, the on-line capacity becomes large, and also the data transfer speed becomes a high speed. Moreover, the total amount of data recording per unit time to each optical disk by the optical disk drives 11*a*–11*f* becomes normally about constant, and the data transfer speed is smoothed.

Here, because one of the optical disk drives 11*a*–11*f* has been arranged for a respective one of the optical disk cartridges 46*a*–46*f*, the constitution may be one bead, the optical disk drives 11*a*–11*f* can record only on the normal single side, and special optical drives are not necessary.

Playback Operation

The optical disk drives 11*a*–11*f* receive control from the control unit 16*a* and play back data from the optical disks of the optical disk cartridges 46*a*–46*f*. At this time, the optical disk drives 11*a*–11*c* play back data from the respective optical disks in the direction from the outer circumference, which has many sectors per track, in succession towards the inner circumference. On the other hand, the optical disk drives 11*d*–11*f* play back data from the respective optical disks in the direction from the inner circumference, which have few sectors per track, in succession towards the outer circumference.

Because of this, the total amount of data played back from the optical disks by the optical disk drives 11*a*–11*f* (namely, the data transfer speed of this optical disk recording and replay device), becomes normally about constant (13.35 MB.second).

The control unit 16*a* combines the data played back by the optical disk drives from the optical disks, and sends it to the host computer.

Third Embodiment

A third preferred embodiment of the present invention will next be described. In this embodiment, similar to the second embodiment, a magazine is used such as shown in FIG. 4.

FIG. 6 is a diagram showing the constitution of an optical disk system according to the third embodiment of the present invention. FIG. 6 shows the state in which, after a magazine 41 has been inserted into the cabinet 10*b*, respective conveyor units 12*a*–12*f* draw out respective optical disk cartridges which are in the magazine 41.

In this embodiment, six optical disk drives are disposed in cabinet 10*b*. Plural conveyor units 12*a*–12*f* (six in this embodiment) are used in order to convey optical disk cartridges 46*a*–46*f* to the optical disk drives.

The control unit 16*b* inserts optical disk cartridges, housed in predetermined housing units within the magazine, in specific optical disk drives, controls each optical disk drive, allocates data to be recorded to each optical disk, and moreover, combines the data played back from each disk. A power supply 17 is arranged in order to operate his system, which also has terminals (not shown in the drawing) and the like for connection to a host computer.

When the magazine 41 is inserted into the cabinet 10*b*, the conveyor units 12*a*–12*f* operate by data from a switch which senses that it has been inserted, or data from the host computer. The conveyor unit 12*a* extracts one optical disk cartridge 46*a* which is housed in the magazine 41, conveys it to a position of the optical disk drive 11*a*, and inserts this